Gloucestershire County Council.

JANUARY, 1920.

ANNUAL REPORT

OF

The Medical Officer of Health

FOR THE

ADMINISTRATIVE COUNTY OF GLOUCESTER

FOR 1918.

SHIRE HALL, GLOUCESTER,

23RD OCTOBER, 1919.

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INDEX.

Gloucestershire County Council.

ANNUAL REPORT, 1918.

HEALTH DEPARTMENT,
SHIRE HALL,
GLOUCESTER,
23rd October, 1919.

To the Chairman and Members
of the Public Health and Housing Committee.

GENTLEMEN,

This—the last of the Reports covering the period of the war—is presented very late owing mainly to the delay in the receipt of the district reports, one being incomplete even now. Many matters in the reports are treated very shortly on an intimation by the Local Government Board that, owing to the conditions prevailing, reports should be brief. There is evidence, however, in them that the necessary postponement of constructional works during the last four or five years has laid up a heavy burden for Local Authorities—Housing, Water Supply, Sewerage, Refuse Disposal, care of the Infectious Sick, &c.—if the sanitary condition of the County is to be raised to a satisfactory standard. In the matter of Housing some little progress had been made by the end of 1918, but, as stated on page 29, the deficiency of houses *on the insufficient pre-war rate of building* was 1,200, apart from the requirements to make the pre-war accommodation satisfactory, and from the developments of various kinds during the war.

The most serious feature of the statistics for 1918 was the great epidemic of influenza in the late autumn and early winter, resulting in probably over 1,000 deaths (with complications), the average of the previous 16 years being about 90. On the other hand, the County enjoyed a remarkable immunity from infections, such as measles, scarlet fever and diphtheria, the incidence of which has been low for the past three years. A fairly full note on Tuberculosis will be found on page 20, *et seq.*

In connection with the treatment side of Public Health a Scheme for the unification of medical services is described on page 32, under the heading of the "Gloucestershire Scheme for the Extension of Medical Services," which, originally drafted in 1918, was finally approved in its present form by the County Council on 7th July, 1919. To mark their appreciation of the possibilities of the Scheme in "the relief of sickness and suffering," the British Red Cross Society have made a generous grant of £7,000, one-half of the estimated capital expenditure.

I have the honour to remain, Gentlemen,
Your obedient servant,
J. MIDDLETON MARTIN,
County Medical Officer of Health.

STAFF CHANGES.

With the signing of the armistice on 11th November, 1918, began the cessation of the urgent demand for medical services, and early in the present year the Medical Officers of Health began to return to their civilian duties and at the time of writing this Report Captain M. Ashley alone remains on military work. So far as I am aware not one of the Sanitary Inspectors had returned by the end of 1918.

RECEIPT OF REPORTS.

For various reasons there was great delay in the arrival of many of the reports: even now (21st October, 1919) there is still one which has not been received, namely, that for the West Dean R.D., but the Medical Officer of Health has supplied me with various figures which have enabled me to complete the statistics for the year. It is greatly to be desired that, now the disturbing influence of military demands has fortunately ended, Medical Officers of Health will complete and send their reports by March in each year at latest.

POPULATION.

The estimated population of the County at the middle of 1918 on the usual basis would have been 334,650, but, as during the previous three years, the Registrar-General has issued special estimates to meet the exceptional circumstances occasioned by the war. These are based mainly upon the rationing returns in connection with the food regulations. The death rate (civilian) populations exclude all non-civilian males, whether serving at home or abroad; the birth rate population consists of the civilian population, plus all non-civilians enlisted from this country, whether serving at home or abroad, distributed amongst the districts in proportion to their estimated civilian population. The populations of the respective districts estimated in this manner are given in Table I. at the end of the Report: the totals for the urban and rural districts and for the County as a whole are:—

TABLE 1.

	Census 1911.	Estimates, 1918. Civilian.	Estimates, 1918. For Birth Rates.
Urban Districts	100,419 ...	89,633 ...	100,430
Rural Districts	228,595 ...	203,585 ...	228,110
Administrative County ...	329,014 ...	293,218 ...	328,540

The exceptional estimates of population make the rates during the war period not strictly comparable with those for previous years, and some revision will probably be necessary when more reliable figures can be calculated after the numbers of the census of 1921 are available.

VITAL STATISTICS.

Birth Rates.

The actual number of births registered during 1918 was 5,001, an increase of 215 on the number in 1917, but 851 below that in 1916 and 1,215 lower than in 1914. The birth rate for the County was 15.2 per 1,000 of the population, .5 higher than in 1917—14.7, which closely approaches half of what the rate was twenty-five years previously, 26.1 per 1,000. The rates for the aggregate urban and rural districts separately from 1907 to 1918 are given in the following Table 2 and for the individual districts in Table I. at the end of the Report.

TABLE 2.

BIRTH RATES.

Revised on 1911 Census.

	1918 *	1917 *	1916 *	1915 †	1914	1913	1912	1911	1910	1909	1908	1907
Urban	13.1	13.7	18.0	17.3	17.6	18.3	17.6	20.0	20.2	21.1	20.5	20.3
Rural	16.0	15.1	17.8	18.35	19.2	20.2	20.2	20.9	21.3	21.85	23·2	22.1
Administrative County	15.2	14.7	17.9	18.0	18.75	19.6	19.4	20.6	20.95	21.6	22.4	21.6
England and Wales ...	17.7	17.8	21.6	21.9	23.8	24.1	23.9	24.3	25.1	25.8	26.7	26.5

* The rates are based on the estimate of total population as explained in the text.
† The rate for 1915 is based on the estimate of the total population for 1914.

It will be noted that while the urban rate decreased still further slightly (to less than half what it was in 1898) the rural rate shows a little recovery, mainly owing to the comparatively high rates in the colliery and manufacturing areas of East Dean R.D. (24.2), West Dean R.D. (21.4) and Lydney R.D. (19.3). In the urban districts the deaths exceeded the

births by 202, but in the rural districts and in the County as a whole the numbers of births were larger than the numbers of deaths. The differences for 1917 and 1918 are:—

	1917.	1918.
Urban Districts—excess of deaths over births ...	71 ...	202
Rural Districts—excess of births over deaths ...	472 ...	504
Administrative County—excess of births over deaths	401 ...	302

From Table I. it will be seen that in 7 of the urban and 7 of the rural districts, separately, the deaths exceeded the births.

The proportion of illegitimate births shows a slight further increase to 6.6 % of total births (as will be seen from the following table) double what it was in 1906 (3.3 %), the lowest rate recorded. The districts with the highest percentages were Newnham U.D. (20.0), Campden R.D. (13.3), Stow-on-the-Wold U.D. (12.5), Tewkesbury R.D. (12.5), Nailsworth U.D. (11.4), Wheatenhurst R.D. (11.1), Winchcombe R.D. (10.6), Westbury-on-Severn U.D. (10.0) and Faringdon R.D. (10.0); and with the lowest Awre U.D. (0), Charlton Kings U.D. (0), Tetbury U.D. (0), Kingswood U.D. (2.7), West Dean R.D. (3.0), Warmley R.D. (3.1) and Dursley R.D. (3.9).

PERCENTAGE OF ILLEGITIMATE BIRTHS.

	1912	1913	1914	1915	1916	1917	1918
Urban Districts	4.5 ...	5.4 ...	4.7 ...	6.1 ...	6.9 ...	9.7 ...	7.2
Rural Districts	3.5 ...	3.7 ...	3.8 ...	4.1 ...	4.8 ...	4.8 ...	6.3
County	3.75...	4.2 ...	4.1 ...	4.7 ...	5.4 ...	6.2 ...	6.6
England and Wales ...	4.3 ...	4.3 ...	4.2 ...	4.4 ...	4.8 ...	5.6 ...	—

The corresponding proportions for the respective districts during 1918 are given in Table I. at the end of this Report.

Death Rates.

In his Report for 1917 the Register General notes that the provisional figures for 1918 indicate an increase of about 3 per 1,000 (from 14.4 to 17.6) in the death rate in England and Wales, owing to the epidemic of influenza which occurred mainly in the fourth quarter. There was also an increase in the total death rate in this County (from 15.0 in 1917 to 16.0 in 1918), but not to so serious an extent as in the country as a whole. The death rate from influenza alone was 2.90 per 1,000, the average for previous years being about .25 per 1,000, but the increase due to this cause is masked by lowered rates from other causes including bronchitis, heart disease, cancer and tuberculosis.

The total death rates in the aggregate of the urban and rural districts and in the County are compared with those for England and Wales in the following Table:—

TABLE 3.

DEATH RATES

revised on Census 1911.

	1918	1917	1916	1915	1914	1913	1912	1911	1910	1909	1908	1907
Urban	17.2	16.1	15.4	16.9	13.7	14.1	12.6	14.1	12.6	15.0	13.7	14.2
Rural	15.5	14.6	14.6	14.8	12.2	12.6	12.6	13.0	12.9	13.0	12.35	13.4
Administrative County	16.0	15.0	14.9	15.4	12.7	13.05	12.6	13.3	12.8	13.6	12.8	13.6
Ditto, corrected for Sex and Age Distribution	—	13.1	13.0	13.4	11.1	11.4	11.0	11.6	11.1	11.8	11.1	11.8
England and Wales ...	17.6	14.4	14.0	14.8	13.6	13.4	13.0	14.3	13.2	14.3	14.5	14.9

The total rate (16.0 per 1,000) is the record maximum so far as returns are available (from 1893), and is 3.4 per 1,000 above the lowest rate (12.6) recorded in the year 1912.

The actual number of deaths in 1918 (4,699) was exceeded by 114 in 1915 (4,813); it was then shown that the main increase had occurred between 1 and 2 years of age and between 5 and 15 years, and that the causes of increase were chiefly measles, whooping-cough and respiratory and tubercular diseases.

In 1918, at ages below 1 year and 65 years and over, the deaths were the lowest recorded, but at all other age groups there were large increases, the number between 15 and 25 years being nearly double that in 1917; between the ages of 1 and 5 years the increase is mainly due to measles and influenza and at other age groups almost entirely to influenza, principally among females. Eight hundred and forty-nine deaths (over six times the highest figure in the last ten years) were attributed to this disease; the previous maximum was in 1907 (157 deaths). It would, therefore, appear that except for this world-wide epidemic of influenza, the death rate for the last year of war

would have been an entirely favourable record, in spite of the prevailing food restrictions.

INFLUENZA.

This disease is not notifiable so that it is impossible to estimate the number of cases that occurred, but—as already mentioned—the number of deaths attributed to the disease was 849. The epidemic is stated to have been world-wide and in this country occurred in two waves, one in the early summer and one in the late autumn. In this County the earlier epidemic appears to have been comparatively mild and complications were not common. The second wave commenced early in October and extended nearly to the end of the year, apparently reaching its summit in the middle of November. So far as can be gathered from the school records the disease broke out almost simultaneously in numerous centres in the County and spread thence very rapidly into the surrounding districts. Marked features of this outbreak were its incidence on young people, including children, and the liability of those attacked to complications. Many Medical Officers of Health who are also in general practice, give interesting accounts of their experiences which appear to accord to a common type. Many cases were mild and the patients recovered in a few days; many, again, early developed symptoms of severe toxæmia, while numerous others developed respiratory complications (chiefly broncho-pneumonia) and many gastric and intestinal complications, the former being the chief causes of death. Dr. Garrett notes that several puerperal women died. Dr. Sisam in his report on the Faringdon R.D. concisely summarises the difficulties in prevention in the following paragraph:—

> "As regards preventive measures, it must be confessed that as yet we have no defensive weapons of much value on account of the peculiar combination of characteristics possessed by influenza and shared with no other epidemic disease. These characteristics are:—(1) Short incubation period which favours rapidity of spread; (2) High degree of infectivity; (3) Wide susceptibility to infection of the general population; and (4) The occurrence of a large proportion of cases in which, during the early and highly infective stage, the symptoms do not differ in character or severity from those of a common cold, with the result that many persons go about as usual during this stage and disseminate infection wherever they go."

On the other hand, much can be done in the way of mitigating attacks and preventing complications by proper care of the

patients, and with this in view the Local Government Board in a circular, dated 4th November, 1918, reminded Local Sanitary Authorities of their wide powers under Section 133 of the Public Health Act, 1875, and urged that suitable nursing assistance should be provided where necessary. It does not appear, however, that advantage was taken of these powers to any great extent, and to this probably two factors contributed—one, that reliance was placed on existing district nurses, and the other the great difficulty that has existed for a long time in obtaining nurses. In the Marston Sicca R.D., however, it is noted that two young women in one family without proper nursing were treated in the Isolation Hospital and that both recovered. Also, in the Warmley R.D. 6 cases (the family of a man on active service) were treated in the Isolation Hospital. Measures adopted generally, apparently, were the issuing of posters. So far as the County Council were concerned, the principal action was the covering of the closure of schools which were almost automatically stopped by the sudden absence of large numbers of scholars, and the release of one of the School Medical Inspectors (in accordance with the circular of the Board of Education of 2nd November, 1918) in November, to take the place of a doctor, with a very large practice, who was ill for some weeks with influenza.

Infantile Mortality.

The actual number of deaths of infants under the age of one year (348) was one below that in 1917 (349) the previous record minimum, but, owing to the number of births being low, the death rate per 1,000 births (70) was above that in 1916 (66): otherwise it is the record low rate and 3 per 1,000 below that in 1917, as will be seen in the following table:—

INFANTILE MORTALITY.

TABLE 4.

	1918	1917	1916	1915	1914	1913	1912	1911	1910	1909
Urban	62	82	66	89	72	90	70	111	86	103
Rural	72	70	66.5	83.5	76	67	73	87	72	72
Administrative County	70	73	66	85	75	73	72	95	76	81
England and Wales ...	97	97	91	110	105	108	95	130	105	109

The information necessary for distributing the infantile deaths according to age at and cause of death is not yet available. It is probable, however, that the conclusions I drew in my Annual Report for 1916 still hold good, namely:—

"(*a*) The main causes to which mortality was attributed are premature births and marasmus (20 % each) respiratory diseases (16 %) and diseases of the digestive tract (10 %), which together account for two-thirds of all the deaths.

(*b*) In addition to the above infants who died within a year of birth, about 30 per 1,000 living children were born dead (this figure has now been reduced to 20 per 1,000).

(*c*) A closer analysis shows that the saving of child life has occurred at ages over one month, but that at ages below one month, the mortality of infants had actually increased in each of the first three weeks of life.

. . . . The lesson from this would appear to be that attention requires to be particularly directed to ante-natal work, skilled attention to mothers in their confinements and special care of infants in the first few weeks of life."

This appears to be the experience in the country generally, for the Registrar General observes in his Annual Report for 1917—

"It is in the first month of life alone that the methods of the last 20 years have not met with conspicuous success, and it is precisely here that the newer methods now being evolved for the promotion of pre-natal hygiene, &c., should have their greatest effect."

MATERNITY AND CHILD WELFARE.

The scheme adopted in 1916 for the promotion of Maternity and Child Welfare has been described in previous Reports; at the meeting of the County Council on the 21st October, 1918, the scope of the scheme was considerably extended and provision was made for practically all the branches included in the circular of the Local Government Board (M. & C.W. 4) dated 9th August, 1918. The extended scheme includes:—

1. Administration.

At present assistance is given by the Superintendent of the County Nursing Association, but the appointment of a lady doctor will probably be desirable.

2. Inspection of Midwives.

This is at present undertaken by the Superintendent of the County Nursing Association and the whole-time County Nurses.

3. Provision of Midwives.

Assistance in the training of suitable women in midwifery for appointment as district nurses is given to the County Nursing Association. The establishment of District Nursing Associations is encouraged by the giving of financial assistance, and emergency nurse-midwives are employed by the County Nursing Association. At the present time considerable difficulty is experienced in obtaining sufficient nurses, and it is probable that the position will have to be made more attractive by improving their status and raising their salaries if the needs of the County are to be met satisfactorily. (See also section on the Midwives Acts page 14).

4. Fees of Doctors called in by Certified Midwives.

The scale of fees adopted by the County Council on 8th July, 1918, is for practical purposes the same as that issued by the Local Government Board under Section 14 of the Midwives Act, 1918.

5. Health Visitors.

Health visiting is undertaken by 7 whole-time County Nurses (and 1 Relief County Nurse) who are in charge of the Health Visiting, Tuberculosis Visiting and School Nursing in their respective areas, and by 86 District Nurses, acting under the County Nurses. During the war there was great difficulty in obtaining nurses, but, it is hoped, that with their return to civil work, it may prove practicable to secure the formation of new District Nursing Associations for the 84 parishes with a population of about 71,000 (rather less than one-fourth of the County) at present without these advantages. When that is effected the whole of the health visiting will be undertaken by District Nurses under the supervision of the County Nurses.

6. Infant Protection Visitors.

It is hoped that, at any rate in the greater part of the County, the Poor Law Guardians will appoint the Health Visitors to undertake these duties.

7. Visiting and Nursing of Measles, &c.

Arrangements are being made for this branch of the work. A large number of the District Nursing Associations

have agreed to co-operate, and it is proposed to provide for the remainder of the County with the assistance of Emergency Nurses appointed jointly by the County Council and the County Nursing Association.

8. Centres.

The County Council have opened no centres, but encourage the opening of centres suited to the circumstances of the different parts of the County and give financial assistance. The number of centres at the end of 1918 was 24, and during the present year 4 have been opened, making a total of 28. Many of these are of a modest character but they are all doing useful work, and, as conditions become more normal, it is hoped that they will increase in number and that their usefulness will be extended.

9. Instruction in Hygiene.

Provision has been made for a limited number of lectures and addresses, to which, in the first place, nurses and midwives will be invited.

10. Institutional Provision for Confinements.

Accommodation has been provided in the Cheltenham and Gloucester District Nursing Homes and has been placed at the disposal of the County Council. Twenty-three cases have been admitted from the County up to the end of May, 1919.

11. Home Helps.

The County Nursing Association have been asked to consider the practicability of training suitable women.

12. Hospitals for Infants.

The County Council have agreed to contribute towards the cost of maintenance of a few cases, urgently in need of care, in existing hospitals. Up to the end of May one child has been treated in the Cheltenham Children's Hospital.

13. Food.

Authority was given on 8th July, 1918, for the supply of milk and food to mothers and infants, and up to the present time milk has been granted for 37 mothers and 43 infants. Various forms of dried milk (Ambrosia, Cow and Gate and Glaxo) are stored at the Shire Hall, and supplies are issued on the request of some responsible person.

14. Creches.

Up to the present time no occasion appears to have arisen for the provision of a Crêche in any part of the County.

15. Convalescent Homes, and Homes for Children.

The County Council have agreed to make contributions in special cases, but so far no application has been received.

The scheme now in force is, therefore, very comprehensive, and by developing it in detail the way is open for much very useful work for the welfare of mothers and their children.

Notification of Births.

There was only slight improvement in the proportion of births notified during 1918, as will be seen from the following table:—

	Births Registered	Births Notified	Percentage Notified
1916 ...	5,852	4,620	78.9
1917 ...	4,786	4,261	89.0
1918 ...	5,001	4,504	90.0

Since January, 1918, notification has been made direct to the County Medical Officer of Health, and the attention of doctors and midwives failing to notify births is now drawn to the requirements of the Acts.

Health Visiting During 1918.

The progress made in the numbers of visits paid since health visiting was first undertaken in this County is shown in the following table:—

	Births referred to Visitors	First Visits	Total Visits
1916 (from 1st April)	1,472	1,857	3,735
1917	3,650	3,320	13,359
1918	4,019	3,461	23,818

The "births referred" are less than the total births in the County mainly owing to the fact that there is a separate scheme for the Borough of Cheltenham, and partly because the returns are not yet quite accurate. It is evident, however, that the efficiency of the work so far as the numbers of visits can show is increasing, and that considerable efforts are made to keep the children under continuous observation.

There is also reason for considering that, with few exceptions, the District Nurses appreciate the importance of this work and give useful encouragement to the mothers in the better management of their infants.

Summary of Report under Midwives Acts.

The numbers of practising midwives have decreased from 314 in 1911 to 252 in 1918, mainly owing to deaths and resignations of women who were registered on the ground of having been in practice on the passing of the Act of 1902. There has been an increase in the number of trained midwives (but not to a sufficient extent to make up for the fall in the number of untrained midwives) from 115 in 1910 to 146 in 1918. Very great difficulty is experienced in securing nurse-midwives and measures for improving the supply are now under consideration by the County Nursing Association and County Council.

The proportion of births attended by certified midwives is fairly constant at about 60 %.

Medical help is sought in between 11 and 12 % of cases for conditions affecting the mother. The proportion of infants for which the assistance of a doctor was desired has risen from 2.0 % (1906-15) to 3.1 % in 1918; there has been a decrease in the proportion of still-births from 2.7 % in 1906-15 to 2.0 % in 1918. These last two facts are satisfactory as showing the greater importance attached to infant welfare, and improved practice.

The reports of the Inspectors appear to show that the midwives generally conduct labours in a methodical and careful manner, and that many are not only keen on their work but are anxious for further instruction with a view to improving their methods. It is thought that one of the reasons that there is difficulty in obtaining nurse-midwives is the responsibility felt by them in rural areas remote from medical assistance. Another reason is, doubtless, that the position is not sufficiently attractive financially and socially.

NOTIFIABLE DISEASE.

The low prevalence of notifiable infectious disease reported during the previous three years extended into 1918, when the smallest numbers of cases of diphtheria and scarlet fever on record were notified. There were also many fewer cases of enteric (typhoid) fever, 36 as compared with 68 in 1917. On the other hand, measles which has been notifiable only since 1916 was responsible for 4,078 cases, double the number in 1917 and 650 more than in 1916.

The average fatality from scarlet fever, diphtheria and enteric fever is given in the following table from 1896 onwards:—

TABLE 5.

Average Fatality (deaths per 100 cases) of Scarlet Fever, Diphtheria and Typhoid Fever.

	Scarlet Fever			Diphtheria			Typhoid Fever		
	Urban	Rural	County	Urban	Rural	County	Urban	Rural	County
1896-1898	1.82	2.09	1.98	20.4	22.3	21.7	21.0	20.9	20.9
1899-1901	2.38	1.78	1.98	10.3	15.7	13.5	15.55	16.9	16.1
1902-1904	1.73	1.88	1.84	10.5	9.9	10.1	19.0	10.5	13.4
1905-1907	.65	1.51	1.26	12.0	7.8	8.5	17.6	11.6	13.8
1908-1910	.40	1.32	1.08	6.1	10.7	9.25	25.7	13.1	19.2
1911-1913	.92	1.14	1.07	5.9	6.8	6.6	11.9	11.6	11.8
1914-1916	1.23	1.25	1.24	12.4	14.0	13.5	14.5	31.7	23.0
1917	.00	.47	.35	11.1	10.9	11.0	100.0	13.6	16.2
1918	.00	1.06	.80	10.7	6.1	8.7	12.5	32.2	27.8

SMALL-POX.

No case has been notified in the County since 1911, but the necessity, if serious trouble is to be avoided, of having all agencies ready for immediate use is shown by the numerous occasions on which the disease has been recently introduced into the country and the manner in which it has spread, especially in some of the ports.

SCARLET FEVER.

The number of cases notified in the County as a whole reached the record low figure of 249, the numbers in the aggregates of urban and rural districts being also the lowest recorded figures. The districts in which more than 20 cases occurred were Chipping Sodbury R.D. (23), Northleach R.D. (23), West Dean R.D. (25), Cirencester R.D. (28) and Cheltenham

M.B. (29—the lowest figures on record). There does not appear to have been a serious outbreak in any district and the type of the disease was mild as will be seen from the following table, though there were two deaths amongst the 249 cases as compared with 1 amongst the 286 cases in 1917.

TABLE 6.

	1918	1917	1916	1915	1914	1913	1912	1911	1910	1909
Cases	249	286	517	1169	1769	1301	770	927	735	677
Deaths	2	1	5	20	18	13	7	12	7	6
Hospital Cases	134	172	220	591	935	738	413	343	309	315
Case Fatality	.80	.35	.97	1.71	1.02	1.0	.91	1.29	1.22	.89
Death-rate per 1000 ...	.01	.00	.02	.06	.05	.04	.02	.04	.03	.02
England and Wales: Death-rate per 1000	.02	.02	.04	.07	.08	.06	.055	.05	.07	.09

DIPHTHERIA.

As will be seen from the following table the actual number of cases during 1918 (299) was almost exactly the same as in 1917 (300) and 1916 (307).

TABLE 7.

	1918	1917	1916	1915	1914	1913	1912	1911	1910	1909
Cases	299	300	307	516	605	393	406	418	551	401
Deaths	26	33	46	69	78	30	29	20	37	39
Hospital Cases	198	199	170	223	271	125	110	113	254	106
Case Fatality	8.7	11.0	15.0	13.4	12.9	7.9	7.1	4.8	6.7	9.7
Death-rate per 1000 ...	.09	.11	.15	.22	.21	.09	.09	.06	.11	.11
England and Wales: Death-rate per 1000	.13	.13	.11	.165	.16	.12	.12	.135	.12	.15

Slightly over one-third of the cases occurred in Cheltenham M.B. (107), and there does not appear to have been any serious prevalence in other areas except Stroud U.D. (17 cases), Gloucester R.D. (14), Stroud R.D. (22) and Wheatenhurst R.D.

(19). All these outbreaks appear to have been very local and mainly limited to one school in Stroud U.D. and to one parish each in Gloucester, Stroud and Wheatenhurst R.D. On the whole the fatality was fairly low—8.7 deaths per 100 cases, though between 1903 and 1913, when larger numbers of cases were notified, many lower rates were recorded. In certain areas, however, the death rate was much higher being 20.0 % in Charlton Kings U.D. (4 deaths), 29.4 % in Stroud U.D. (5 deaths), 33.3 % in Warmley R.D. (1 death) and 27.3 % in Winchcombe R.D. (3 deaths). The explanation given by Dr. Green of the high fatality in Stroud U.D., namely, the late stage at which the doctor was called in, probably applies to other areas.

As regards Cheltenham, Dr. Garrett observes that—

"The cases were of mild type and were scattered over the town, and that the only definite outbreak occurred in connection with a school, run in relation to Nazareth House, continuing from 1917." He adds that: "'swabbing' the throats led to the detection of a 'carrier' and ended the outbreak at the time."

"Carriers" were similarly detected in Gloucester and Stroud R.D.

ENTERIC (TYPHOID) FEVER.

Of the 36 cases notified during 1918, 12 occurred in Gloucester R.D., 6 in Cheltenham M.B. and 4 in Northleach R.D.; the remaining 14 being distributed over 9 other districts. The numbers of cases, deaths, &c., year by year are given in the following table:—

TABLE 8.

	1918	1917	1916	1915	1914	1913	1912	1911	1910	1909
Cases	36	68	38	30	51	35	28	90	26	53
Deaths	10	11	8	4	15	9	1	8	10	7
Hospital Cases	11	10	26	9	8	8	6	41	8	25
Case Fatality	27.8	16.2	21.1	16.7	27.8	25.7	3.6	8.9	38.5	13.2
Death-rate per 1000 ...	.03	.04	.03	·02	.05	.03	.003	.02	.03	.03
England and Wales: Death-rate per 1000	.03	.03	.03	·035	.05	·04	.04	.07	.05	.06

From this table will be seen the general low incidence of the disease in this County with the exception of 1917. As noted in my last Report, 63 of the 68 cases notified that year occurred in the County Asylum. Of the 12 cases notified in 1918, 10 were at the County Asylum (this time in the second Asylum). A visit was paid to the institution by Dr. Sidney Coupland, of the Board of Control, on 12th February, 1918, but the source of the infection could not be proved. The other two cases in this district were at Hempsted where from time to time the disease has occurred owing to the absence of a satisfactory supply of water at Lower Rea. No special note is made on the Cheltenham cases; those in the Northleach R.D. were attributed to a cowman who was subject to diarrhœa, but, so far as I am aware, the nature of the illness was not confirmed by bacteriological examination.

PUERPERAL FEVER.

Eight cases were notified and two deaths were attributed to this condition (one each in Newnham U.D. and Thornbury R.D.) which were not notified. Of the 8 notified cases, 3 women were attended by doctors, 3 by nurse-midwives (one patient being found to suffer from venereal disease), 1 was confined in a Home, and about the last no information was given to me. On the whole, cases of this disease are much more infrequent than they used to be; thus in the 15 years to 1910 the average annual number was 16, and during the past 8 years 9.

CEREBRO-SPINAL FEVER AND POLIO-MYELITIS.

This County has been comparatively immune from serious outbreaks of these diseases of the central nervous system, and in 1918 only 6 cases (4 of the former and 2 of the latter) were notified as compared with 20 (10 of each) in the previous year.

In two of the cases of cerebro-spinal fever I performed lumbar puncture (in one case shortly after death had occurred) and in both specimens the specific organism was found; one of the patients was a girl in the W.A.A.C. and the other was a soldier on leave. The powers of the County Council in respect to this disease were extended by the regulations, dated 1st April, 1918, and 16th June, 1919, whereby they are now empowered to provide examination and treatment of persons suspected to be suffering from cerebro-spinal fever: on the

21st June, 1919, the County Medical Officer was authorised to make necessary arrangements after consultation with the Chairman of the Committee.

The two cases of Anterior Polio-myelitis occurred in Charlton Kings U.D. and Cheltenham M.B.

OPHTHALMIA NEONATORUM.

The number of cases notified has steadily decreased from 27 and 29 in 1914 and 1915 to 16 in 1918. The only notes in the annual reports on these cases are in that for the Cirencester R.D. by Dr. Green, who says—"that what is essential is "proper nursing assistance;" in both cases notified in this district the infants recovered without any permanent injury to the eyesight. Notifications from midwives of cases of discharge from the baby's eyes are carefully watched and investigation is made to ensure, as far as possible, that adequate nursing is provided.

MEASLES.

The number of cases notified during 1918 was 4,078, but in several reports it is said that many more cases occurred than were notified; the number of deaths certified as due to this disease was 36. The practicability of giving assistance with a view to the proper care of children affected has been under consideration from time to time and, as noted in my last Report, the County Council finally decided to arrange for visitation by nurses, but at that time it was not settled whether the work should be done by whole-time nurses or advantage taken of the services of district nurses. A conference with the County Nursing Association was held on 5th July, 1918, at which visitation by District Nurses was approved and it was left to each District Nursing Association to decide whether or not they would co-operate. As a general result 55 of the 98 District Nursing Associations have agreed, and arrangements are now being made for the visitation of cases (and their nursing in special instances) partly through the nurses of these Associations and partly by whole-time emergency nurses. The same difficulty that has been experienced in other connections has been partly responsible for delay in this matter, namely, the scarcity of nurses, but it is now hoped that effect will be given to the proposals at an early date, if only in a partial manner.

TUBERCULOSIS.

In my last Report I specially referred to the great increase that had occurred in the number of deaths attributed to this disease during 1917, and mentioned that the number of newly-detected cases showed no such increase. I pointed out that the latter fact suggested that there was not increased infection occurring amongst the large numbers of persons engaged in unusual work owing to the war, but that, subject to future experience, the high mortality was due to certain conditions during the year which were specially unfavourable to persons affected with more or less long-standing infection.

On the other hand Sir Arthur Newsholme came to the conclusion in his Annual Report for 1917-18 (p. lx.)—

> "That the excessive mortality amongst women was associated with their more extensive employment in munition and other industrial occupations."

Dr. Stevenson (General Register Office) in his Report for 1917 (p. lv.) says—

> "That the rise is largely the result of war conditions, that overcrowding in asylums occasioned by the war accounts for 41 % of the increase, that, while the increased work of women in factories may account for the chief part of the rise at ages 15-25, there was also an increase (obviously not due to factory work) at ages 5-15." He concludes, "possibly these children have suffered from some change in their diet, such as deprivation of fats, which has not affected children under 5."

With these observations in mind I have closely analysed the pulmonary tuberculosis figures for this County during the past eight years and, shortly, the results are as follows:—

1. There was a steady decrease in the number of cases notified from 625 in 1913 to 417 in 1917. In 1918 there was an increase to 456, entirely due to female notifications.

2. The proportions in the various age groups increased for males at ages 10-20 and 35-65, and for females at 1-5, 15-20, 25-45 and over 55: the largest increase was for females at 35-45.

3. As regards deaths—

   (*a*) After irregular rise and fall a maximum number of total deaths was reached in 1917, 361; in 1918 there was a fall to 329.

   (*b*) The male deaths in the last three years were 146, 191 and 146 respectively, while the female

deaths rose steadily from 136 to 170 and finally to 183 in 1918.

(*c*) Comparing the two groups of years 1911-4 and 1915-8 there was an increase in the average number of deaths occurring at all ages over 2 years, the largest rise occurring at 5-15 and the next at 2-5.

(*d*) The largest increase in the *number* of deaths was amongst males aged 25-45 from 61 in 1916 to 98 in 1917, the number falling to 61 in 1918. The next largest was among females aged 25-45, from 56 in 1916 to 70 in 1917 and 78 in 1918.

It would appear that—

1. Except for an increase in number of female *notifications* in 1918, the number of new cases has steadily decreased.
2. The increase in females occurred at various age groups, from 1-5 upwards, and mainly at 35-45.
3. There has been an increase in the number of *deaths* during war years, particularly in 1917, the increase, so far as females are concerned, extending into 1918.
4. The increased fatality has occurred at all ages over 2 years, the largest at 5-15 and the next at 2-5.

Whilst increased employment of female labour in factories may account for some of the increase this cannot be the explanation of the second and last of the above statements, and it would appear that the conclusion I drew in my last Report is probably correct for this County.

Another aspect of the tuberculosis problem is the duration of the disease from the time it is just recognised, and an effort has been made to discover whether or not the statistics in this County throw any light on the matter. The figures in the following Table A give the numbers of cases known to exist in the County in each of the past six years, the numbers of deaths amongst these persons and the death rates year by year.

(A) TUBERCULOSIS.

	Pulmonary				Non-Pulmonary			
Year	Known cases in County during year	Deaths	Per cent. Death Rate	Survivors	Known cases in County during year	Deaths	Per cent. Death Rate	Survivors
1913	493	41	8.3	452	121	13	10.7	108
1914	977	209	21.4	768	223	25	11.2	198
1915	1242	214	17.2	1028	307	36	11.7	271
1916	1459	345	23.6	1114	368	50	13.6	318
1917	1490	242	16.2	1248	381	35	9.2	346
1918	1685	260	15.4	1425	408	27	6.6	381

(B) PULMONARY TUBERCULOSIS SUMMARY.

(1) Death rates among notified cases in year of notification.
(2) Death rates among notified cases to end of 1918 among cases surviving year of notification.

Year	(1) Year of Notification				(2) To end of 1918				
	Total cases notified	Deaths before end of year of notification	Death Rate for year of notification	Left County	Un-accounted for	Survivors at end of year of notification	Deaths by end of 1918 (excluding those occurring in year of notification)	Death Rates of persons surviving year of notification	
1913	625	41	—	68	64	152	236	52.2	after 5 years
1914	626	124	19.8	51	50	101	143	35.6	„ 4 „
1915	542	107	19.7	52	16	367	129	35.2	„ 3 „
1916	476	115	24.2	48	3	316	111	36.1	„ 2 „
1917	417	109	26.2	36	5	267	60	22.5	„ 1 year
1918	456	133	29.2	19	—	304	—		—

Omitting the first year, 1913, the figures for which are evidently incomplete, it would appear from Table A that the fatality amongst the increasing number of persons notified as suffering from pulmonary tuberculosis is steadily getting less. There is the same tendency amongst persons notified as suffering from other forms of tuberculosis. On the other hand, from Table B, the proportion of notified pulmonary cases dying before the end of the year in which they were notified has steadily increased from 19.8 % and 19.7 % in 1914 and 1915 to 29.2 % in 1918. The figures were further analysed with a view to ascertaining the fatality amongst persons who survive the year in which they were notified. These last two series of figures are given in Table B. From this it will be seen that slightly over half the known notified persons during 1913 remaining in this County died in the course of the succeeding five years; the corresponding death rates for those notified during the next three years were almost exactly identical, about 36 %: 22.5 % of the 1917 cases surviving the year of notification died in the subsequent year. We have then these three facts for consideration as regards pulmonary tuberculosis—

1. The mortality in the year of notification has steadily increased.

2. The mortality amongst the known notified population shows a distinct tendency to become lower year by year.

3. The mortality amongst those surviving the first year of notification was—

   (*a*) For the 1913 cases 52.2 %, *i.e.*, after 5 years.

(*b*) For the 1914, 1915 and 1916 cases almost exactly the same (36 %), *i.e.*, after 4, 3 and 2 years respectively.

(*c*) For the 1917 cases 22.5 % after 1 year.

As regards (1), it has already been suggested that the increase in the pulmonary tuberculosis death rate in the country is due to three factors—

1. Overcrowding of asylums.
2. Unusual employment (especially of women) owing to war work.
3. Alteration in diet, such as deprivation of fats, due to war conditions.
4. Another factor is the exclusion from notification of certain persons by consultation at Tuberculosis Dispensaries who would otherwise have increased the numbers of persons on which the death rate is calculated, and who being less likely to die than definitely tuberculosis persons would have helped to make the death rates appear lower.

These factors possibly account for some of the increased fatality in the year of notification, but one would expect that they would also have similarly affected the remaining notified tuberculous population. This is not the case, as it has been shown that the death rate among the notified population has fallen year by year and was lower in 1918 than in any year since 1913. Further, while the fatality of the 1913 survivors was just above one-half after five years, that among the 1914, 1915 and 1916 survivors was fairly constant at about 36 %, after 4, 3 and 2 years respectively.

The explanation is not easy to find, but two suggestions offer themselves:—

1. That the notified population is including a cumulative proportion of persons who had symptoms simulating pulmonary tuberculosis, but not actually suffering from active tubercular infection, thus diluting the statistics. There is reason for thinking that from the operation of the County scheme the numbers of these cases added year by year is steadily getting less, but in the bulk they are probably considerable.

2. That, if persons suffering from pulmonary tuberculosis survive an average period of six months from the stage at which the disease is generally recognised, the progress of the disease is definitely retarded, giving the flat rate shown for 1914, 1915 and 1916 survivors, and that the average duration of the disease is distinctly longer than is generally considered.

It will be of great interest to see if the death rate of the 1917 survivors at the end of 1919 approaches the flat rate of the survivors of the previous three years at the end of 1918, and, generally, to watch the experience of the few years succeeding this war period.

I have not, in the course of the above remarks, referred to the scheme for the treatment and prevention of tuberculosis in this County, which has now been in operation for some years, as I do not think the work so far done can have had marked effect on a disease which is of the chronic character of tuberculosis. Good must undoubtedly have been done, particularly by the removal of very infective cases from their homes for prolonged periods to the pavilions at Isolation Hospitals and to other institutions, by the recognition of cases in an earlier stage and their treatment in a sanatorium, and also by the educative effect of the scheme generally, but not yet to such an extent as to have affected the statistics of the past few years very appreciably. Details of the scheme have been given in my previous Reports and it will now suffice to make a few brief notes only on the progress of the work.

Dispensaries.

During 1918 a new building was in course of erection at Thornbury and took the place of unsatisfactory quarters at the beginning of March, 1919. The number now in use is 8. Proposals for greatly extending the opportunities of examination and consultation will be found in the scheme for the extension of medical services on page 32.

The work done at the dispensaries is indicated in the following table:—

	New cases notified			Work of Dispensaries		
	Pulmonary	Other forms	Total	New cases	Persons seen	Attendances
1915	542	137	679	921	?	4741
1916	476	116	592	749	?	3743
1917	417	80	497	734	1216	4069
1918	456	65	521	879	1483	5211

From the 1st October, 1915, Dr. Dickson, the Tuberculosis Officer, worked single-handed as it was not thought desirable to appoint a successor to the Assistant Tuberculosis Officer owing to the military demands for medical services. For the efficient performance of the work under satisfactory conditions, it has always been recognised that an assistant is required and accordingly one was appointed as soon as war demands allowed. The post is at present held by Captain A. Riley, M.B., Ch. B. (formerly of Frimley Sanatorium), who commenced work in this County on 23rd April, 1919, and will take charge of the County Tuberculosis Institution as soon as it is opened. From the dispensaries the following numbers of patients were distributed amongst the Institutions named:—

			No. of Admissions 1918
1.	Early cases—Cranham Lodge Sanatorium	52 beds	139
2.	Surgical cases—		
	(*a*) Cheltenham General Hospital ...	10 „	17
	(*b*) Cossham Memorial Hospital ...	2 „	
3.	Children—		
	(*a*) Alexandra Home	15 „	30
	(*b*) Cheltenham Dispensary ...	4 „	4
4.	Advanced cases—		
	(*a*) Gloucester Isolation Hospital ...	14 „	17
	(*b*) Stroud Isolation Hospital ...	12 „	31

In addition, 104 patients were given the use of shelters for prolonged periods.

As mentioned last year, the most urgent further requirements, so far as institutions are concerned are a considerably increased number of beds for advanced cases and accommodation for very many more children. As regards the former an additional pavilion with 12 beds (primarily for ex-service men) is in course of erection at the Gloucester Isolation Hospital. The latter is proposed in connection with the Tuberculosis Institution, most kindly offered to the County Council by the Gloucestershire Branch of the British Red Cross Society, as a memorial of the work of the Voluntary Aid Detachments in the subsidiary Military Hospitals in this County, as soon as a suitable site is found. The accommodation proposed in connection with this Institution includes the following provision for—

(*a*) Early and observation cases 75 beds
(*b*) Advanced cases . . ... 40-50 beds
(*c*) Children ... ... 200 places
(*d*) Employment of suitable cases in certain work.

The last will probably be, in the main, prolonged treatment with a view to the development of working capacity, so that the patients may be placed in as good a condition as possible for resuming their former occupation or taking up work better suited for them.

The scheme would be incomplete without making arrangements for considerable developments in this last direction. The most convenient course appears to be for the authorities in different areas to provide after-treatment combined with training in a branch of industry for which local circumstances are particularly suitable. In this County there are exceptional opportunities for training in afforestation, and plans for a hostel, in connection with the School of Forestry in the Forest of Dean, are being prepared for erection on a site offered by the Crown within easy access of the school. Another colony is proposed by Worcestershire for training in market gardening. By development on these lines it should ultimately prove practicable to secure the employment of all persons in suitable industries, and thus make schemes of treatment complete.

On the other hand, there is an immense field for development on the preventive side which is scarcely touched by the above scheme except for the educative influences and the care of advanced cases. This side falls mainly on Local Sanitary Authorities in the control of the conditions under which people live: the schemes now being proposed for the greatly increased provision of new houses will be helpful; but a very important factor is the improvement of existing houses, especially as regards ventilation and cleanliness, and it would be an advantage if the authorities providing tuberculosis schemes had direct powers in these matters.

VENEREAL DISEASES.

The scheme adopted by the County Council on the 22nd October, 1916, under the Public Health (Venereal Diseases) Regulations, 1916, was outlined in my Report for that year, and notes on the work done during 1917 were given in my last Report. Further progress was made during 1918, of which the following is a short resumé:—

Propaganda.

A successful series of addresses arranged by a local committee was given in the late autumn in Works in the Stroud

neighbourhood and in Dursley; and another at Mothers' Meetings, &c., in and round Tetbury, through the kindness of Mrs. Heygate. The course had, unfortunately, to be discontinued towards the close owing to the serious epidemic of influenza.

Bacteriological Examinations.

The numbers of specimens examined at the Public Health Laboratory, University of Bristol, are:—

	Spirochetes	Gonococci	Wasserman	Other	Total
1917 (from July)	2	26	46	1*	75
1918	4	72	136	2†	214

* Cerebro-spinal Fluid. † Cerebro-spinal Fluid and Urine.

Fifteen further specimens were examined at the Treatment Centres.

Treatment.

The centres available for treatment in or near the County are the General Hospitals at Bristol, Cheltenham, Gloucester and Stroud. The numbers of new cases, attendances, &c., during 1917 and 1918 were:—

	New cases							Injections of	
	Syphilis	Soft Chancre	Gonorrhœa	Not Venereal	Total	Attendances	In-patient days	Salvarsan Substitutes Out-patients	In-patients
1917	31	2	15	13	61	258	524	92	
1918	73	6	77	50	206	1090	662	237	52

During 1918 the opportunities for treatment were extended by increasing the openings of the clinics at the Cheltenham and Gloucester Hospitals. Also, the annexe to the Stroud Hospital was opened in September, 1918, for both out-patient and in-patient treatment.

Hostel for Rescue Cases.

Considerable difficulty was experienced in finding a house which was suitable for the purpose and near one of the centres, but ultimately the Gloucester Diocesan Association for Rescue and Preventive Work were successful in securing the offer of a house, known as Plâs Trevor, in Charlton Kings. This house was equipped, largely from gifts of furniture, &c., from Voluntary Aid Hospitals on closing, made by the Gloucestershire Branch of the British Red Cross Society, but it did not prove practicable to open it until June, 1919. It should serve a very useful purpose by enabling girls and women more or less without settled homes to have the prolonged treatment often

necessary for their cure, in which, but for such facilities, they might not persist.

Extension of Facilities for Treatment.

In their circular of the 10th December, 1918, the Local Government Board urged the extreme importance of securing a considerable extension of facilities for the free treatment of venereal diseases. The need for making treatment more generally available has been realised in this County for a long time and the practicability of providing centres accessible to all parts has had much consideration. The solution, it is thought, has been found in the general scheme which is outlined on page 32, *et seq.* As regards Venereal Diseases it is considered that some special assistance may be necessary, *e.g.*, to give demonstrations to Medical practitioners and consult with them on special cases, which can not be conveniently arranged by the Hospital Staff, and with this in view, Dr. Dickson, the Tuberculosis Officer, was given leave of absence to take a course in Venereal Diseases. This he has done and his services will now be available for consultation on cases of these diseases. The Local Government Board have not only approved of the principle of the scheme but have offered to assist in negotiations with the General Hospitals. The latter, however, have readily agreed to co-operate, and it is hoped that steps will be taken to give effect to the scheme in the autumn.

BACTERIOLOGICAL EXAMINATIONS.

The numbers of specimens examined under the agreement of the County Council with the University of Bristol, during 1918 and preceding years, are given in the following table:—

	Diphtheria	Enteric Fever	Tuberculosis	Cerebro-spinal Fever	Total
1905-14 yearly average	1553	49	207	—	1809
1915	1713	31	369	6	2119
1916	721	32	348	1	1102
1917	716	57	523	8	1304
1918	687	35	517	6	1245

A statement of the arrangements made for these and special examinations was given in my Annual Report for 1916 (p. 20). It has long been felt that these arrangements are by no means adequate in view of the modern requirements and especially of the developments occasioned by the war, and proposals for

a comprehensive agreement with the University of Bristol are now under consideration. Under these proposals arrangements would be made for pathological and bacteriological work, which will be of very great assistance to medical men practising in the County and of considerable benefit to the community.

ISOLATION HOSPITALS.

From the notes in the annual reports it appears that no changes were made during the year. There are many districts for which no accommodation has been provided or the existing arrangements are in greater or less degree unsatisfactory, and it should be the care of the respective Councils to ensure that proper provision is made.

HOUSING.

From the annual reports it appears that during 1918 little, if any, more progress was made in the inspection, repair, &c., of houses than during the previous two years, and, so far as information has been given, only one new house was built. The shortage of houses—on the rate of building prior to the war—cannot now, therefore, be placed at a lower figure than 1,200. On the other hand, it is noted in many of the reports that before the end of the year the provision of houses had had consideration. Districts in which it was stated that definite action had been taken are:—

Cheltenham M.B.—A scheme for 400 new houses was being prepared and sanction was desired for a site. A further improvement scheme for the abolition of 174 houses was under consideration.

Cirencester U.D.—A good site had been chosen and a scheme for a substantial number of houses was being prepared.

Kingswood U.D.—A scheme for 200 houses was proposed.

Newnham U.D.—A scheme was reported to be in hand.

Stroud U.D.—A suitable site had been obtained at Uplands.

Tewkesbury B.—A scheme for 112 houses was proposed.

Campden R.D.—District Committees were appointed to ascertain the requirements.

Cirencester R.D.—A local architect was appointed and sites were under consideration.

Faringdon R.D.—A site for 10 houses was awaiting approval.

Lydney R.D.—A scheme for 342 houses in connection with the ship-building yard at Tidenham was well in hand, but no houses were actually occupied by the end of the year.

Stroud R.D.—Schemes were in hand for three parishes.

Tewkesbury R.D.—A scheme for many houses was being pressed forward.

Warmley R.D.—A good site for 48 houses at Bitton had been purchased, and 3 or 4 more schemes were under discussion.

Winchcombe R.D.—An advertisement for an architect had been issued and the Council were ascertaining the houses required.

Doubtless the matter had favourable consideration in other areas, but in many cases the notes in the reports are very brief. That there are few, if any, parts of the County where the amount of accommodation is adequate appears to be generally recognised; but there are districts in which the importance of taking active steps to ascertain the actual needs and of putting forward promptly proposals to make good the deficiency do not appear to be fully appreciated. A frequent comment in the reports, even where it is thought there is a sufficiency of accommodation, is that more or less large numbers of the houses are far from satisfactory and need considerable alteration to make them reasonably fit for habitation. This latter aspect of the problem has, however, scarcely received the consideration which it requires, but, undoubtedly, if the conditions of housing are to be improved, repairs and alterations must be effected in large numbers of houses, and every effort must be made to make the best of existing accommodation even if—in some cases—the houses cannot be made permanently satisfactory.

In July of the present year (1919) the passing of the Housing, Town Planning, &c., Act, greatly increased the powers and responsibilities of Local Sanitary Authorities, and, in event of default, wide discretion is given to the Ministry of Health to ensure that all necessary works are carried out. Thereby, great impetus has been given to the development of housing schemes on which observations will be made in the next reports. But, closer attention must be given to the improvement of existing accommodation to bring it up to a reasonable standard.

WATER SUPPLY.

No developments of any kind are reported. In general it is said that, owing to the heavy rainfall, supplies generally were adequate. The parts of the County in which deficiency of supply is noted—in several cases the same comment has been made for many years—are Coleford U.D. (whole district), Nailsworth U.D. (shortage in summer months), Stroud U.D. (constant supply desirable), Campden R.D. (Chipping Campden), Dursley R.D. (Cam), East Dean R.D. (Ruardean Hill, Joy's Green and Brain's Green), Gloucester R.D. (parts of Hempsted—especially Middle and Lower Rea—and Elmore), Northleach R.D. (Aldsworth and Northleach) and Tewkesbury

R.D. (Stoke Orchard and Tredington). It is said that a pure and plentiful supply will be available for the two Garden Villages in Lydney R.D. at Beachley and Sedbury when these are completed.

The question of water supply will probably become very acute in connection with many housing schemes, and it is to be hoped that in providing water for them the sources will be made available for many other neighbouring parts at present in need of satisfactory supplies.

SEWERAGE AND SEWAGE DISPOSAL.

In most cases Medical Officers of Health have acted on the suggestion of the Local Government Board that the annual report for 1918 should be brief, and, as a consequence, notes on this and various other sanitary matters are very limited. Only two new works are reported: one is the completion of the sewerage and sewage disposal works for Yate in the Chipping Sodbury R.D., mainly in connection with the Aeroplane Repair Factory, but the disposal works will also serve for Chipping Sodbury and Westerleigh, both of which are in need of sewerage; the other is the scheme for the Sedbury Garden Village which is nearing completion. On the other hand—brief though are the reports—there are many places mentioned by Medical Officers of Health as requiring sewerage or extension of existing works, *e.g.*, Coleford U.D. (complete system), Nailsworth U.D. (completion of scheme), Stroud U.D. (extension of sewers), Campden R.D. (Chipping Campden C.P.—sewerage), Cirencester R.D. (Ampney S. Peter—complaint by Thames Conservators), Dursley R.D. (Kingswood—sewerage, and Cam—connections with sewers), East Dean R.D. (Mitcheldean C.P. and Drybrook Ward—sewerage), Gloucester R.D. (Hempsted, Quedgeley and Tuffley—sewerage), Northleach R.D. (Andoversford — sewerage), Pebworth R.D. (Honeybourne — sewerage), Stroud R.D. (various parts—sewerage), Tewkesbury R.D. (Tredington—sewerage) and Warmley R.D. (Bitton—sewerage, and Mangotsfield—increased filtering area).

These needs will, undoubtedly, be accentuated in those parts where additional houses are erected, and the questions of efficient drainage should have careful consideration with a view to meeting all requirements of each locality in one scheme.

The nuisance arising from and trouble caused by the most common type of closet in the County—the privy vault—also causes notes to be made in many reports, and no house which has this most objectionable form of closet can be regarded as satisfactory.

In the report on the Warmley R.D. it is said that the Bath Sewage Disposal Works, which were constructed in 1913-4 in the Keynsham R.D., on the southern bank of the Avon, opposite Bitton in the Warmley R.D., are a very potent source of trouble, owing to persistent and offensive smell. Complaint has been made by the Warmley R.D.C. to the Keynsham R.D.C. and Local Government Board, and it was stated that an inquiry was pending.

GLOUCESTERSHIRE SCHEME FOR THE EXTENSION OF MEDICAL SERVICES.

In the development of Public Health Work, treatment is gradually assuming larger proportions and as instances of this tendency may be mentioned the schemes for the treatment of tuberculosis, of defects of school children and of venereal diseases. The general procedure has been to start a new medical service for each condition and, if this course were pursued, the result would be a number of independent services for the treatment of different conditions, many of the various groups of patients coming from the same houses. In large centres of population this line of development may be satisfactory, but in County areas to have a number of special doctors and nurses making the same journeys and the opening of special centres in the same parts of the County for small numbers of different classes of case is obviously uneconomical and wasteful in the highest degree. The position finally became acute in this County during 1918 in view of the decision of the Education Committee to provide treatment for school children, and owing to the strongly felt need of extending the opportunities for the treatment of venereal disease. It was, therefore, decided to consider the question from the broadest standpoint and, as a result, the following scheme was devised and, after passing through the necessary intermediate stages, it was finally approved in its present form by the County Council on the 7th July, 1919.

Introduction.

The development of schemes of treatment in connection with various groups of persons and classes of case, for which provision has been made at the public expense, has necessarily led to careful consideration as to the best manner of making treatment available. In large centres of population the problem is comparatively simple, as an extension of medical services can readily be arranged by opening a treatment centre and appointing a suitable officer. But the problem in County areas is of a far different character, as the great difficulty of distance has to be overcome; this can be instanced by comparing the circumstances in this County with those in the contiguous County Borough of Bristol.

Bristol	...	13,200 persons per square mile.
Gloucestershire		270 ,, ,, ,,

From this concise statement it is obvious that it is impracticable to establish special centres for each class of case attended by a special medical officer in such a manner that one would be accessible for inhabitants from every part of the County. On the other hand, there are administrative advantages in schemes worked by whole-time officers, and there are also undoubted advantages in securing the attendances of specialists for the examination and treatment of the special groups of persons; but, unless the arrangements are such that all, or at least the greater number, of the persons resident in the area can attend at the centres, a considerable proportion of the population in country districts will be excluded by distance from these advantages. A further question arises and that is, are the advantages of specialists so great as to render their examination of all persons essential for the satisfactory working of a scheme? Our experience with reference to the treatment of tuberculosis goes to show that a large part of the work of the tuberculosis officer is general consultant work on a wide variety of cases, presenting symptoms which might be due to tuberculosis, but which are often due to other conditions, and in practice he has to bring to bear not so much his specialist experience of tuberculosis as his whole general medical training. That the assistance of the specialist is necessary in every scheme there can be no doubt, but his services should be available in the way of consultation rather than in routine examination of all persons attending at the centres.

The requirements of County areas are then, that:—

1. Schemes of treatment must be so arranged that a centre is available for every part of the County, that is, the places of treatment must be generally distributed so that each class of case can have appropriate treatment even though the actual numbers in each group may and probably will be small.
2. Appropriate medical and nursing services must be available for each centre.
3. Arrangements must exist whereby consultant services may be readily and promptly available.

In the consideration of the practicability of making such arrangements, the question naturally arises whether or not there is existing machinery of which advantage can be taken in the development of schemes, and the answer is undoubtedly in the affirmative. In the large General Hospitals are not only the most complete equipment for medical and surgical treatment, but also the most highly trained medical, surgical and specialist services available in the whole country; of these there are four in or bordering on the County. There are, also, dotted about the County, 11 Cottage Hospitals and, distributed over the County, 240 medical practitioners.

In the General Hospitals will be found the consultant services, and through the agency of the smaller hospitals and the medical practitioners, working closely in co-operation with the General Hospitals, complete medical services available for the whole area of the County can be provided.

Schemes of Treatment for Special Groups.

The need for considering this question broadly has been brought out by—

1. The urgent need for making the scheme for the treatment of venereal diseases available, even for the scattered parts of the County.
2. The initiation of a scheme for the treatment of school children.
3. The desirability of increasing the facilities in connection with the tuberculosis scheme.
4. The requirements for the care of ex-service men.
5. The developments in connection with Maternity and Child Welfare Scheme, especially ante-natal work.

For all these, provision has been made at the public expense and there is strong probability that there will shortly be further developments, such as—

1. Extension of the medical services provided under the National Insurance Acts.
2. Transfer of the Poor Law Medical Services to County Councils, and their improvement and development.

Two main courses offer themselves: one, an extension of the specialist services at present provided for tuberculosis and venereal diseases, and the other, the development of existing services and their improvement by close co-ordination. The necessity of adopting the latter course, if the advantages are to be available throughout the whole area of Counties, has already been mentioned and, if the co-operation between the medical practitioners and the consultants is complete—as it must be—not only will the schemes for the care of special classes be effective but there will, incidentally, be important consequences in the direction of improving the efficiency of medical service, from the stimulus of the close association of all practitioners—specialist and general—with one another.

The initial difficulty in evolving a practical scheme on these lines is the number of bodies—central and local—affected, but in this County a scheme giving effect to the proposals has been approved by all concerned:—The County Council and its Committees, the General Hospitals, the Medical Practitioners in the County at a meeting specially convened for the purpose, and by the Government Departments. Shortly, the scheme consists in the opening of some 50 out-stations (somewhat on the lines of existing tuberculosis dispensaries with consulting room, waiting room and dressing rooms), so that one will be accessible within a radius of about every three miles of every part of the County. At these, out-patient treatment of all the special classes of persons, for whom provision has at present been made at the public expense or may be made in the future, will be available. The usual medical attendants will be the local practitioners, and the specialist staff of the hospitals will attend periodically for consultation and for the examination of cases reserved for them.*

* Incidentally it may be mentioned that an ambulance service is also proposed which will be available for general hospital cases, but primarily the out-stations are intended for the special groups of cases whose treatment will be chiefly such as can be given in an out-patient department.

The principal objection, which has been raised, is the mingling of the different classes of case in the same building, but, owing to the large number of out-stations and the scattered populations served, the cases of any one disease will be very small, and probably there will be only one or two (or even none for some periods) of the special cases. It is, however, proposed that the utility of the out-stations shall be increased by making them available for any medical services (*e.g.*, out-patient treatment under the National Insurance Acts) by arrangement with the County Council. In addition to medical services, intermediate treatment will also be given by nurses (school cases, &c.), trained orderlies (venereal diseases, &c.), masseurs and masseuses (ex-service men, &c.), and it is hoped that arrangements may be made for the district nurses to reside at the out-stations.

Possibly more beds will be required for in-patient treatment, and these can be provided by enlarging existing hospitals and providing beds in suitable cases at out-stations, as circumstances require and opportunity offers.

Gloucestershire Scheme.

The following scheme was originally put forward in April, 1918, but has been modified in certain particulars.

The details so far settled are:—

1. The authority for carrying out the scheme will be a Board consisting of representatives of the County Council and of the General Hospitals.
2. The General Hospital areas shall be those shown on the sketch plan, subject to such modifications as experience shall show to be necessary.
3. In each Hospital area an Advisory Committee shall be formed of members of the Hospital Staff and Medical Officers in charge of the out-stations, whose duties will embrace—
   (*a*) Ensuring that all treatment given at the out-stations is effective, and
   (*b*) Advising the Board of Representatives on all medical matters, including all difficulties arising in connection therewith.
4. The situation of the out-stations shall be as shown on the plan and where practicable shall be established in

connection with the Cottage Hospitals. They will be opened in the order decided by the amount of work likely to be done at each and will be arranged to meet the circumstances of each particular area, being larger and more completely equipped in the denser localities than in the more scattered areas.

5. The out-stations will be provided and equipped by the County Council.

6. The uses of the out-stations are primarily for examination and out-patient treatment in connection with—

   (*a*) Venereal Diseases,
   (*b*) Tuberculosis,
   (*c*) Ex-service Men,
   (*d*) School Children,
   (*e*) Maternity and Child Welfare,

   for which provision has been made at the public expense. They will also be available for other conditions for which provision may be made in the future, and may be used by the Medical Officers for insured persons and general hospital cases, by arrangement with the County Council.

7. The Staff will be:—

   (*a*) Medical—

      (1) A regular staff consisting of local practitioners appointed as medical officers by the Board of Representatives.

      (2) A consultant staff consisting of—

         (i.) Visiting Staff of the General Hospital.

         (ii.) The Tuberculosis and Venereal Disease Officer of the County Council.

   (*b*) Nursing—

      (1) District Nurse
      (2) Masseur or Masseuse
      (3) V.D. Orderly and Nurse

      } *Peripatetic*

8. The out-stations will be opened:—

   (*a*) Weekly at a convenient hour, on a fixed day, for attendance by the medical officer, or oftener if necessary for the work of the County Council.

(*b*) Periodically, for attendance by members of the Visiting Staff, and by the Tuberculosis and Venereal Disease Officer, by arrangement.

(*c*) As often as may be necessary for intermediate treatment by the Nursing Staff.

(*d*) At such other times for the convenience of the Medical Officer in seeing his own patients and hospital cases, by arrangement with the County Council.

9. A register shall be kept of all attendances in a book provided for the purpose, and a case file kept for each case containing such simple notes as may be necessary for the medical history of the patient.

10. The expenses of the scheme shall be paid as follows:—

(*a*) The County Council will arrange for the maintenance of the out-stations.

(*b*) The County Council will pay the District Nurse.

(*c*) The Hospital will pay, out of sums provided by the County Council—

(1) The Medical Officers at a fixed rate per hour or part of an hour, for openings of the out-stations under 8 (*a*).

(2) The members of the Visiting Staff at rates to be agreed.

(3) The peripatetic nurses and orderlies at salaries to be arranged.

11. After the first year, the advisability of re-arranging the scales of payments on a case or attendance basis will be considered in the light of the experience gained.

12. All possible efforts will be made to secure the close co-operation of all Hospitals in the area—General and Special—with a view to the ready admission and transfer of patients to the Institutions most suited to their respective needs.

SALE OF FOOD AND DRUGS ACTS.

A summary of the results of the examinations made during 1918 and the previous ten years is given in the following table:—

	1908-1917			1918		
	Examined	Adulterated	Per cent. Adulterated	Examined	Adulterated	Per cent. Adulterated
Milk	1216	151	12.4	240	19	7.9
Butter	985	11	1.1	11	1	9.1
Margarine ...	91	0	—	10	0	—
Tea, Coffee, Cocoa	336	14	4.2	39	0	—
Sugar	260	1	.4	0	0	—
Other foods ...	680	2	.3	113	2	1.8
Alcoholic Drinks	678	67	9.9	28	3	10.7
Others—Drugs	286	0	—	31	2	6.5
Total ...	4532	246	5.4	472	27	5.7

The most satisfactory feature in the above table is the great decrease in the proportion of milk samples found to be adulterated. In 1915 the proportion was 21.4 % and in 1916 20.0 %. In 1917 the numbers of samples taken were increased from about 110 to 174, and in 1918 to 240, the percentage adulterated decreasing in the former year to 11.5 and in 1918 to 7.9. This result appears to indicate that it is only by concentrating on this work and by thus increasing the risks of would-be adulterators that sophistication of this important food will be prevented. The penalties imposed by the magistrates cannot in many cases be considered as anything like adequate to discourage adulteration to any great extent. In two cases, however, the magistrates did mark the serious character of the offence against the public by inflicting fines of £8 and £10 respectively.

In the case of butter adulteration, the fats consisted of 95 % of fat other than butter fat. The two samples of other foods adulterated were both mustard, with about 10 % of added starch. Of the three adulterated alcoholic drinks, two were beer and one brandy.

TABLE I.—RATES, &c.

DISTRICTS.	BIRTHS						DEATHS					
	Population for Birth Rates	Legitimate	Illegitimate	%	Total	Rate	Population for Death Rates	Total	Rate	Under 1 Year: Legitimate	Under 1 Year: Illegitimate	Under 1 Year: Total	Infantile Mortality
URBAN DISTRICTS—													
Awre	1,078	22	...	...	22	20·4	962	12	12·5	1	...	1	45
Charlton Kings	4,546	53	...	...	53	11·7	4,057	75	18·5	2	...	2	38
Cheltenham	47,726	512	48	8·6	560	11·7	42,595	780	18·3	32	8	40	71
Cirencester	7,328	111	8	6·7	119	16·3	6,540	107	16·4	5	...	5	42
Colcford	2,586	52	5	8·8	57	22·0	2,308	36	15·6	4	..	4	70
Kingswood	15,543	220	6	2·7	226	14·5	13,872	184	13·3	14	...	14	62
Nailsworth	2,993	31	4	11·4	35	11·7	2,671	34	12·7	2	1	3	86
Nownham	1,127	12	3	20·0	15	13·3	1,006	21	20·9	2	1	3	200
Stow-on-the-Wold	1,204	14	2	12·5	16	13·3	1,075	22	20·4	...	...	...	...
Stroud	8,361	109	12	9·9	121	14·5	7,462	130	17·4	2	...	2	17
Tetbury	1,672	26	...	...	26	15·5	1,492	42	28·1	1	...	1	38
Tewkesbury	4,701	57	6	9·5	63	13·4	4,196	79	18·8	5	1	6	95
Westbury-on-Severn	1,565	27	3	10·0	30	19·2	1,397	23	16·5	2	...	2	67
Total Urban Districts	100,430	1,246	97	7·2	1,343	13·4	89,633	1,545	17·2	72	11	83	62
RURAL DISTRICTS—													
Campden	5,400	65	10	13·3	75	13·9	4,819	83	17·2	3	1	4	53
Cheltenham	5,404	67	4	5·6	71	13·2	4,823	69	14·3	1	..	1	14
Chipping Sodbury	21,536	293	20	6·4	313	14·5	19,221	274	14·3	15	6	21	67
Cirencester	11,727	182	13	6·7	195	16·6	10,466	135	12·9	6	...	6	31
Dursley	12,451	173	7	3·9	180	14·4	11,112	164	14·7	10	...	10	56
East Dean and United Parishes ...	20,835	463	41	8·1	504	24·2	18,595	288	15·5	26	4	30	60
Faringdon (part of)	1,042	9	1	10·0	10	9·6	930	11	11·8	1	..	1	100
Gloucester	12,275	159	11	6·5	170	13·9	10,955	155	14·1	11	2	13	76·5
Lydney	9,523	174	10	5·4	184	19·3	8,499	125	14·7	12	2	14	76
Marston Sicca	1,606	20	1	4·8	21	13·1	1,433	20	13·9	2		2	95
Newent (part of)	6,479	85	7	7·6	92	14·2	5,782	121	21·0	8	1	9	98
Northleach	8,231	112	7	5·9	119	14·5	7,346	102	13·9	5	1	6	50
Pebworth	3,254	38	3	7·3	41	12·6	2,904	37	12·7	1	...	1	24
Stow-on-the-Wold (part of) ...	6,637	100	6	5·7	106	16·0	5,923	86	14·5	8	1	9	85
Stroud	28,728	323	21	6·1	344	12·0	25,640	426	16·6	28	1	29	84
Tetbury (part of)	3,941	52	4	7·1	56	14·2	3,518	44	12·5	4		4	71
Tewkesbury (part of)	4,855	49	7	12·5	56	11·5	4,333	76	17·5	2	..	2	36
Thornbury	17,949	270	17	5·9	287	16·0	16,020	252	15·7	28	1	29	101
Warmley	16,194	285	9	3·1	294	18·2	14,453	282	19·5	36	1	37	126
West Dean	15,363	318	10	3·0	328	21·4	13,711	163	11·9	21	1	22	67
Wheatenhurst	5,710	80	10	11·1	90	15·7	5,096	103	20·2	5		5	56
Winchcombe (part of)	8,970	109	13	10·6	122	13·6	8,006	138	17·2	8	2	10	82
Total Rural Districts	228,110	3,426	232	6·3	3,658	16·0	203,585	3,154	15·5	241	24	265	72
Administrative County	328,540	4,672	329	6·6	5,001	15·2	293,218	4,699	16·0	313	35	348	70

TABLE II.

NOTIFIABLE INFECTIOUS DISEASES.—1918.

	Census Population, 1911	Diphtheria			Erysipelas		Scarlet Fever			Enteric Fever			Puerperal Fever			Cerebro-Spinal Meningitis			Polio-myelitis			Ophthalmia Neonatorum			Pulmonary Tuberculosis			Other Tuberculosis			Measles		Total	
		Cases	Hospital	Deaths	Cases	Deaths	Cases	Hospital	Deaths	Cases	Hospital	Deaths	Cases	Hospital	Deaths	Cases	Hospital	Deaths	Cases	Hospital	Deaths	Cases	Hospital	Deaths	Cases	Sanatorium and Hospital	Deaths	Cases	Admission to surgical beds	Deaths	Cases	Deaths	Cases	Deaths
Urban Districts—																																	
Awre	1070	..	...	...	...	...	...	...	...	...	...	.	.	...	...	.	...	...	...	...	.	2	...	..	1	..	2	.	...	...	...	...	3	2
Charlton Kings	4495	20	20	4	4	.	...	...	...	...	...	...	...	...	..	..	...	...	1	...	1	.	..	.	4	2	3	...	...	...	27	..	56	8
Cheltenham	48942	107	96	8	19	..	29	29	...	6	4	1	3	3	2	2	2	...	1	1	1	4	...		74	21	63	12	4	13	493	12	750	100
Cirencester	7631	5	3	...	4	...	7	5	..	.	.		..	...	.	...	...	...	..	...	...	1	..	.	3	2	5	.	...	4	39	..	59	9
Coleford	2604	...	...	...	...	...	2	...	...	.	..	...	...	...	...	.	...	...	.	...	...	...	...	.	2	5	5	...	...	1	28	...	32	6
Kingswood	12700	7	1	...	...	1	4	1	...	...	...	...	...	...	...		...	..	...	...	...		..		17	11	16	3	2	6	398	3	429	26
Nailsworth	3031	...	...	...	2	..	1	1	...	1	1	...	...	...	...	...	...	..	...	...	...	..	...	...	2	3	3	..	...	...	70	...	76	3
Newnham	1021	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	.	...	...	...	..	...	...	1	1	2	.	...	...	2	...	4	3
Stow-on-the-Wold	1301	3	...	..	.	...	.	...	...	.	...	...	...	...	...	...	...	.	...	...	.		...	.	1	1	1	.	...	...	1	...	5	1
Stroud	8767	17	11	5	1	...	7	5	..	...	...	...	...	...	..	..	...	.	.	...	...		..	.	18	10	11	3	...	3	220	5	266	24
Tetbury	1758	..	...	..	...	...	...	...	...	...	...	...	.	...	...	...	...	.	.	.	.	.	.	.	..	..	3	.	...	...	202	1	202	4
Tewkesbury	5287	5	5	1	4	1	10	5	..	1	...	...	...	...	...	1	1	1	.	.	...	1		.	2	1	5	.	...	2	19	...	43	10
Westbury	1812	3	...	...	...	...	...	...	..	.	...	..	.	...	...		.	.			...			.	..	.	3	2	...	...	3	...	8	3
Total Urban Districts	100419	168	136	18	34	2	60	46	...	8	5	1	3	3	3	3	3	1	2	1	2	8	...	..	125	57	122	20	6	29	1502	21	1933	199
Rural Districts—																																	
Campden	5597	1	.	...	2	...	1	...	...	.	...	..	...	...	...		...	...	...	...	...		...	..	6	2	4	5	...	3	108	...	123	7
Cheltenham	5254	3	2	...	2	...	5	4	...	1	1	...	1	...	1	..	...	..	...	...	...	..	...	..	3	4	6	2	...	..	15	...	32	7
Chipping Sodbury	20955	6	...	...	4	1	23	...	...	..	...	...	...	...	...	..	...	...	...	...	...	...	...	.	63	5	16	8	1	4	258	2	362	23
Cirencester	12746	3	3	...	..	.	28	19	..	...	...	...	...	...	..	..	...	...	...	...	...	2	...		13	8	12	2	1	2	115	...	163	11
Dursley	12233	5	1	...	8	1	..	...	...	3	...	2	1	...	...	..	...	..	...	...	..		.	..	13	10	12	2		1	370	...	402	16
East Dean	19952	4	4	...	4	.	6	6	.	2	2	1	.	...	...	...	...	...	.	.	..	1	...		16	15	23	4	..	4	99	.	136	28
Faringdon	1167	...	...	...	.	.	3	3	...	.	.	...	.	...	...	..	...	..	...	...	..	...	...		1	1	...		..	..	1	...	5	..
Gloucester	12615	14	2	...	4	..	3	..	...	12	...	...		...	...	.	...	.			...		...		27	8	7	2	1	1	27	.	89	8
Lydney	9005	3	...	...	3	...	14	12	...	2	...	...		...	...	...	...	..	...		..		...		6	7	10	1	...	1	104	1	133	12
Marston Sicca	1609	5	5	...	1	..	.	...	..	...	...	...		...	...	...	...	..			..		...		1	1	...		..	..	5	.	12	..
Newent	6964	2	1	...	1	..	8	2	..		...	...	2	...	...	...	...	...			1		...		10	1	9	1	..	..	29	1	53	11
Northleach	8056	7	7	...	..	...	23	12	..	4	1	..	1	...	1	...	...	..					...		3	.	1	1	...	..	9	..	48	2
Pebworth	3239	3	2	2		..	1	1	...		...	...	...	...	..	..	...	.					...		1	1	1	1		.	17	.	23	3
Stow-on-the-Wold	6803	2	...	...	4	...	7	...	...		..	..		...	...	.	...	.	...				...		1	1	3	.	1	.	31		51	3
Stroud	28068	22	15	..	5	1	16	16	.		.	2		...	...	1	1	...			...		...		55	30	35	10	1	4	669	7	778	49
Tetbury	3913	.	...	...	...	.		...	...	1	1	1	..	...	...	...	...	...	...	...	..	.	...		1	1	4	1	...	3	175	..	178	8
Tewkesbury	5074	7	7	1	2	...	4	4	..	.	...	..		...	...	.	...	...	...	...	...	1	...		3	...	5	.	1	1	40		57	7
Thornbury	19079	7	..	1	5	..	5	.	..		...	1		...	1	..	...	...	...	...	...	3	...		13	6	14	3	...	2	138	...	174	19
Warmley	17188	3	1	1	4	...	6	1		.	...	1		...	.	..	...	...	...	...	...	1	...		22	15	19	6	1	1	181	3	223	25
West Dean	13454	4	...		4	1	25		1	2	...	..		...	...	...	...	...	...	...	...	.	...		13	7	11	1	3	3	109	...	158	16
Wheatenhurst	6093	19	1	.	...	...	1	...	1	..	...	1	.	...	...		...	...		...	...	..	...	.	3	1	8	...	...	...	55	1	78	11
Winchcombe	9531	11	11	3	4	2	10	8	...	1	1	...	...	...	...		...	.	...	...	...	.	...	.	5	6	7	2	1	3	18	...	51	15
Total Rural Districts	228595	131	62	8	57	6	189	88	2	28	6	9	5	...	3	1	1	..	...	...	1	8	...	...	282	130	207	52	11	33	2576	15	3329	284
Administrative County	329014	299	198	26	91	8	249	134	2	36	11	10	8	3	6	4	4	1	2	1	3	16	...	...	407	187	329	72	17	62	4078	36	5262	183

TABLE III. (A)—URBAN DISTRICTS.

1918.

L.G.B.—TABLE III.—CAUSES OF AND AGES AT DEATH.

CAUSES.	All ages	Under 1 year	1—2 years	2—5 years	5—15 years	15—25 years	25—45 years	45—65 years	65 years and over	Awre	Charlton Kings	Cheltenham	Cirencester	Coleford	Kingswood	Nailsworth	Newnham	Stow-on-the-Wold	Stroud	Tetbury	Tewkesbury	Westbury-on-Severn
Enteric Fever	1	...	...	...	...	1	...	...	...	...	..	1	...	...	...	...	...	...	...	...	...	...
Small-pox	...	...	...	...	...	...	...	..	...	...	..	...	...	...	...	...	...	...	...	...	...	...
Measles	21	4	3	10	4	...	...	...	...	...	...	12	...	...	3	...	...	...	5	1	...	...
Scarlet Fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Whooping Cough	6	3	2	...	1	...	...	...	...	...	1	4	...	...	1	...	...	...	...	...	..	...
Diphtheria and Croup	18	...	1	5	12	...	...	...	...	...	4	8	...	...	...	...	...	...	5	...	1	..
Influenza	316	4	7	15	29	49	129	53	30	...	15	159	25	7	33	2	5	7	34	7	19	3
Erysipelas	2	...	1	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	1	...
Phthisis	122	...	...	2	5	32	54	25	4	2	3	63	5	5	16	3	2	1	11	3	5	3
Tuberculous Meningitis	5	...	1	1	2	...	...	1	...	...	...	2	1	...	1	...	...	...	...	...	1	...
Other Tuberculous Diseases	24	1	1	1	5	3	7	4	2	...	...	11	3	1	5	...	...	...	3	...	1	...
Cancer, Malignant disease	134	...	...	...	...	...	8	50	76	1	8	78	5	2	11	3	2	1	13	2	6	2
Rheumatic Fever	2	...	...	...	2	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	..
Meningitis	5*	...	...	1	2	1	1	...	...	...	...	...	1	...	1	1	...	...	1	...	1*	...
Organic Heart Disease	169	...	...	1	3	1	13	35	116	1	7	93	8	2	25	8	3	1	11	4	5	1
Bronchitis	69	2	3	3	...	...	2	16	43	...	3	25	5	5	11	2	2	1	6	4	4	1
Pneumonia (all forms)	93	3	8	12	14	1	17	22	16	1	8	49	5	1	20	1	...	...	2	...	5	1
Other Diseases of Respiratory Organs	13	1	...	1	...	...	1	4	6	...	1	7	2	...	1	...	...	1	1	...	...	..
Diarrhœa and Enteritis (under 2 years)	5	5	...	...	...	...	...	...	...	...	...	3	...	...	1	...	...	...	...	...	1	...
Appendicitis and Typhlitis	6	...	..	...	2	1	2	1	...	...	...	3	1	1	...	...	...	1	...	...	...	...
Cirrhosis of Liver	12	...	...	...	..	..	...	10	2	...	3	4	4	...	...	...	...	...	1	...	...	...
Alcoholism	2	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	1	1	...	...
Nephritis and Bright's Disease	37	...	...	...	...	1	1	13	22	...	2	19	2	1	2	...	1	2	5	1	2	...
Puerperal Fever	3	...	...	...	...	1	2	...	...	...	...	2	...	..	...	...	1	...	...	...	...	...
Other Accidents and Diseases of Parturition	7	...	...	...	...	1	6	...	...	...	1	3	1	...	1	...	...	...	1	...	...	...
Congenital Debility, and Malformation and Premature Birth	39	37	1	1	...	...	...	...	...	...	...	17	4	2	4	2	3	...	...	1	3	3
Violent Deaths (excluding suicides)	19	1	...	2	3	2	2	5	4	1	...	7	...	1	4	...	...	1	2	1	2	...
Suicides	8	...	...	..	...	1	4	1	2	1	...	3	...	...	...	1	...	...	...	2	...	1
Other Defined Diseases	402†	22	6	7	5	6	39	69	248	5	19†	205†	33	8	42	11	2	6	27	15	22	7
Diseases, ill-defined or unknown	5	...	...	..	1	...	...	1	3	...	...	1	2	...	...	...	...	...	1	...	...	1
TOTAL	1545	83	34	62	90	101	288	313	574	12	75†	780†	107	36	184	34	21	22	130	42	79	23

* Includes one case of Cerebro-spinal Fever. † Includes two cases of Polio-myelitis, one each in Charlton Kings and Cheltenham Borough.

TABLE III. (B)—Rural Districts.

1918.

L.G.B. TABLE III.—CAUSES OF AND AGES AT DEATH.

CAUSES	All ages	Under 1 year	1–2 years	2–5 years	5–15 years	15–25 years	25–45 years	45–65 years	65 years and over	Campden	Cheltenham	Chipping Sodbury	Cirencester	Dursley	East Dean and United Parishes	Faringdon (part of)	Gloucester	Lydney	Marston Sicca	Newent (part of)	Northleach	Pebworth	Stow-on-the-Wold (part of)	Stroud	Tetbury (part of)	Tewkesbury (part of)	Thornbury	Warmley	West Dean	Wheatenhurst	Winchcombe (part of)
Enteric Fever	9	..	...	..	1	4	2	1	1	..	...	...	...	2	1	...	...	...	..	...	...	...	...	2	1	...	1	1	...	1	...
Small-pox	...	...	...	...	...	..	...	...	...	...	.	...	...	...	...	...	...	...	...	...	...	...	...	...	..	...	...	..	...	...	...
Measles	15	2	6	6	1	...	...	...	...	...	...	2	...	..	...	...	...	1	...	1	...	...	...	7	...	...	...	3	...	1	...
Scarlet Fever	2	..	..	1	1	...	...	..	...	...	..	...	...	..	...	...	...	...	...	...	...	...	...	...	...	...	..	...	1	1	...
Whooping Cough	39	18	10	9	2	...	...	...	...	...	2	...	...	...	7	...	4	1	1	3	...	...	1	4	1	1	1	10	1	...	2
Diphtheria and Croup	8	1	...	3	4	...	...	...	...	...	...	...	...	...	..	...	...	...	..		...	2	...	...	...	1	1	1	...	...	3
Influenza	533	10	11	25	40	99	231	78	39	23	19	65	19	27	38	2	21	21	5	14	15	5	24	61	2	13	42	45	33	14	25
Erysipelas	6	1	...	...	1	...	1	1	2	...	...	1	...	1	...	...	...	...	...	..	...	...	...	1	...	...	...	...	1	...	2
Phthisis	207	1	...	1	12	61	85	42	5	4	6	16	12	12	23	...	7	10	..	9	1	1	3	35	4	5	14	19	11	8	7
Tuberculous Meningitis	9	3	...	1	3	2	...	...	...	3	...	1	...	...	1	...	1	...	...	...	...	...	...	1	1	...	...	...	...	...	1
Other Tuberculous Diseases	24	...	1	...	3	6	8	3	3	...	...	3	2	1	3	...	..	1	...	...	...	..	...	3	2	1	2	1	3	...	2
Cancer, Malignant Disease	265	...	...	2	...	2	18	109	134	6	1	23	10	9	19	...	19	9	2	13	10	2	6	52	1	5	26	18	9	14	11
Rheumatic Fever	5	...	...	...	1	3	...	1	...	...	...	..	...	2	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1
Meningitis	20	4	1	5	4	2	2	2	..	...	...	1	1	...	3	...	1	4	...	...	...	...	...	2	2	...	1	3	1	...	1
Organic Heart Disease	406	...	...	1	1	6	21	114	263	11	7	30	17	29	31	1	21	13	2	31	11	5	8	42	8	7	42	41	15	15	19
Bronchitis	165	16	2	2	...	2	1	17	125	4	2	13	7	8	23	1	10	11	..	5	3	..	3	14	5	4	7	24	11	2	8
Pneumonia (all forms)	192	22	13	14	10	21	35	28	49	4	2	12	10	9	21	1	11	4	2	9	5	5	3	21	..	4	19	20	14	5	11
Other Diseases of Respiratory Organs	37	4	1	1	2	1	2	12	14	...	...	1	2	2	5	...	...	3	...	...	3	...	1	4	...	5	2	5	3	...	1
Diarrhœa and Enteritis (under 2 years)	23	19	4	...	...	...	...	...	...	1	...	4	1	1	3	...	1	...	...	1	1	...	1	2	...	...	4	...	2	...	1
Appendicitis and Typhlitis	19	...	...	...	4	6	2	5	2	...	...	2	...	1	4	...	1	...	...	1	...	...	1	2	...	...	1	1	1	2	2
Cirrhosis of Liver	7	...	...	...	...	...	2	2	3	...	...	2	...	...	...	...	1	1	...	...	...	...	...	1	...	...	1	...	...	1	...
Alcoholism	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..
Nephritis and Bright's Disease	72	2	...	2	...	2	8	27	31	3	1	9	1	2	9	...	2	3	...	3	4	...	2	9	...	...	6	5	4	6	3
Puerperal Fever	3	...	...	...	..	1	2	...	...	...	1	...	..	...	...	...	...	...	...	...	1	..	...	...	...	...	1	...	..	...	...
Other Accidents and Diseases of Parturition	14	..	...	...	...	...	14	..	...	...	1	2	1	1	...	...	1	1	...	2	...	...	...	1	...	...	1	...	2	...	1
Congenital Debility, and Malformation and Premature Birth	109	106	1	1	...	...	...	1	...	...	...	8	4	5	14	...	5	6	...	1	6	...	3	14	1	1	18	12	6	3	2
Violent Deaths (excluding suicides)	90	4	2	2	16	14	10	21	21	2	2	6	3	3	10	...	11	2	...	2	1	2	2	11	1	1	9	4	7	6	5
Suicides	17	...	...	..	...	1	6	6	4	...	...	..	...	1	2	...	1	3	...	...	1	...	1	6	...	...	...	...	1	1	...
Other defined Diseases	847*	52	7	5	18	15	63	163	524	21	25	72	42	48	70	6	36	31	8	26*	39	15	27	127	15	28	53	69	37	23	29
Diseases ill-defined or unknown	11	...	1	1	1	...	3	4	1	1	...	1	3	...	...	...	1	...	..	...	...	...	...	4	...	...	...	...	...	...	1
Total	3154	265	60	82	125	248	516	637	1221	83	69	274	135	164	288	11	155	125	20	121	102	37	86	426	44	76	252	282	163	103	138

* Includes one case of Polio-myelitis.